

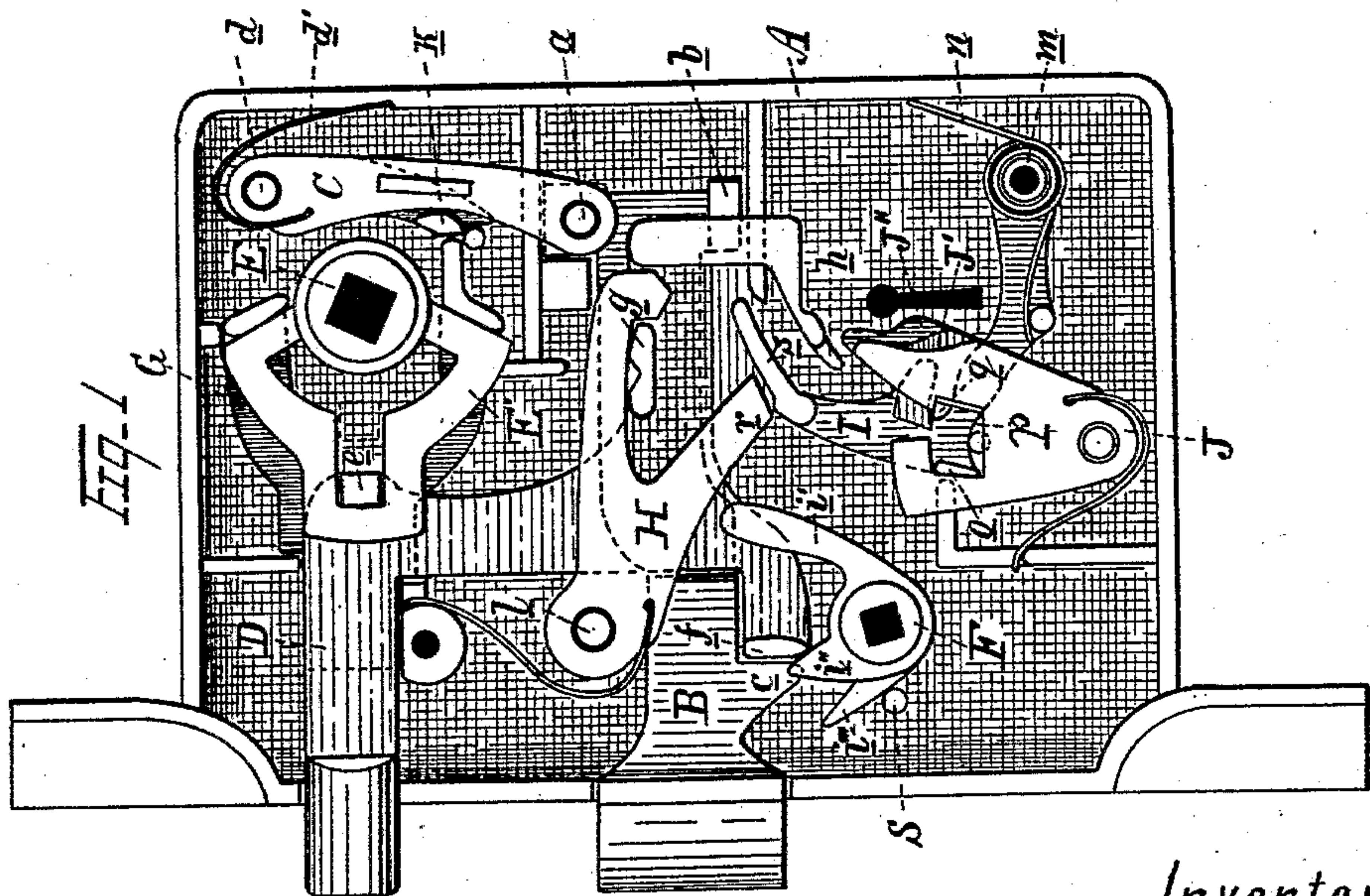
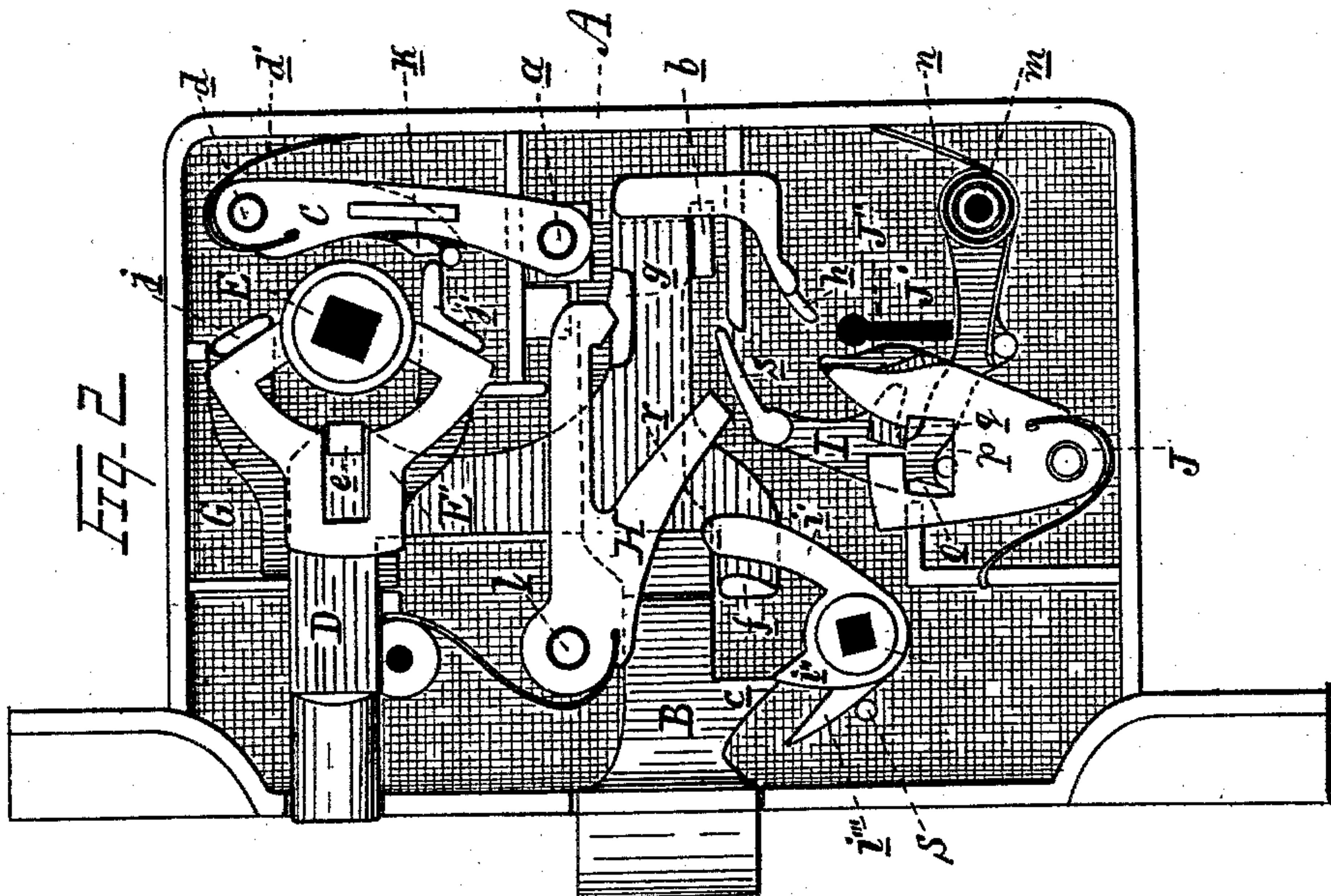
(Model.)

3 Sheets—Sheet 1.

T. A. AUBERLIN.
LATCH AND LOCK COMBINED.

No. 414,482.

Patented Nov. 5, 1889.



Witnesses:

John Schuman
P. M. Hulbert

Inventor:

Theophilus A. Auberlin.

by Thos. S. Maquie & Son
Att'y

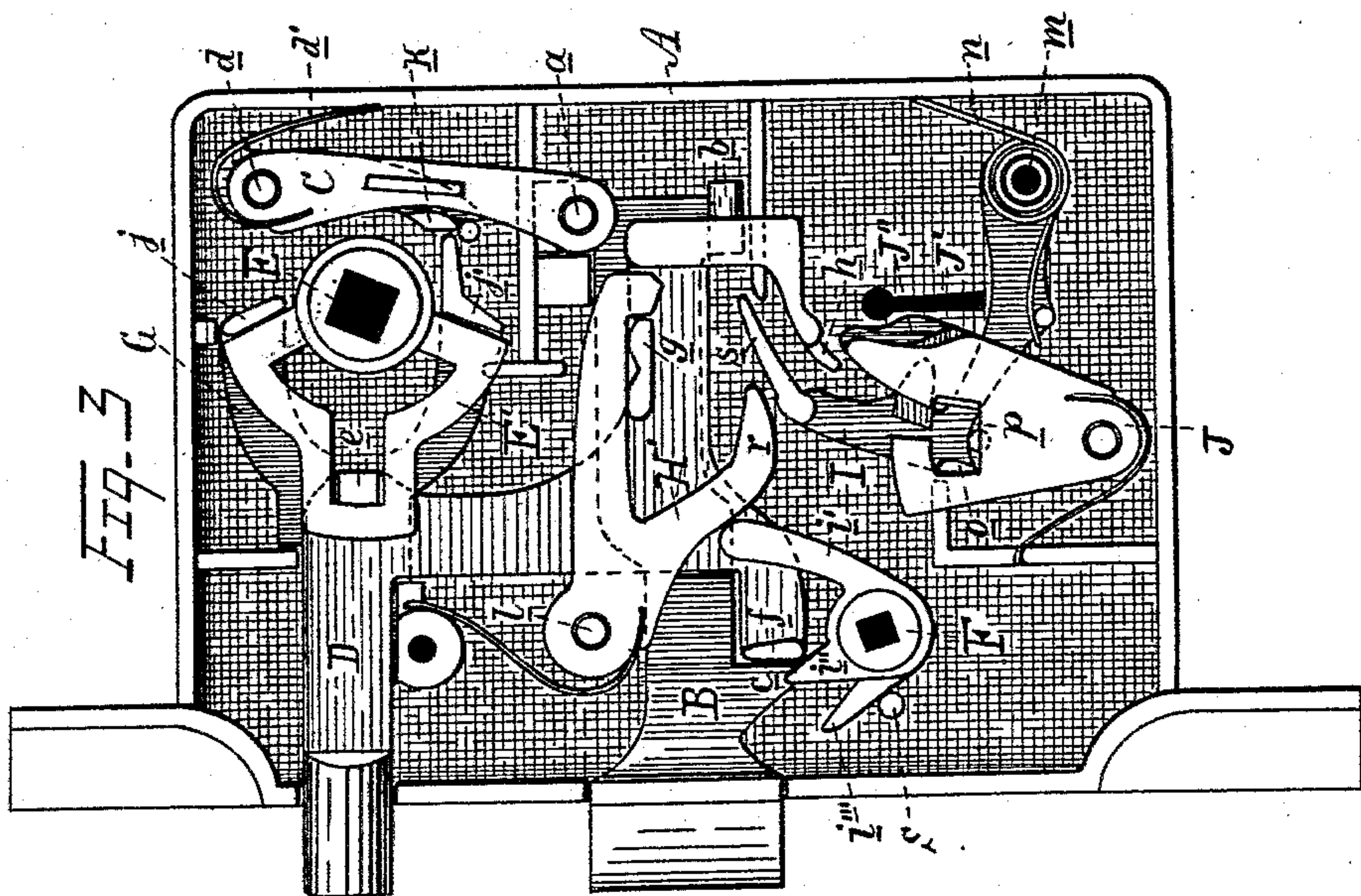
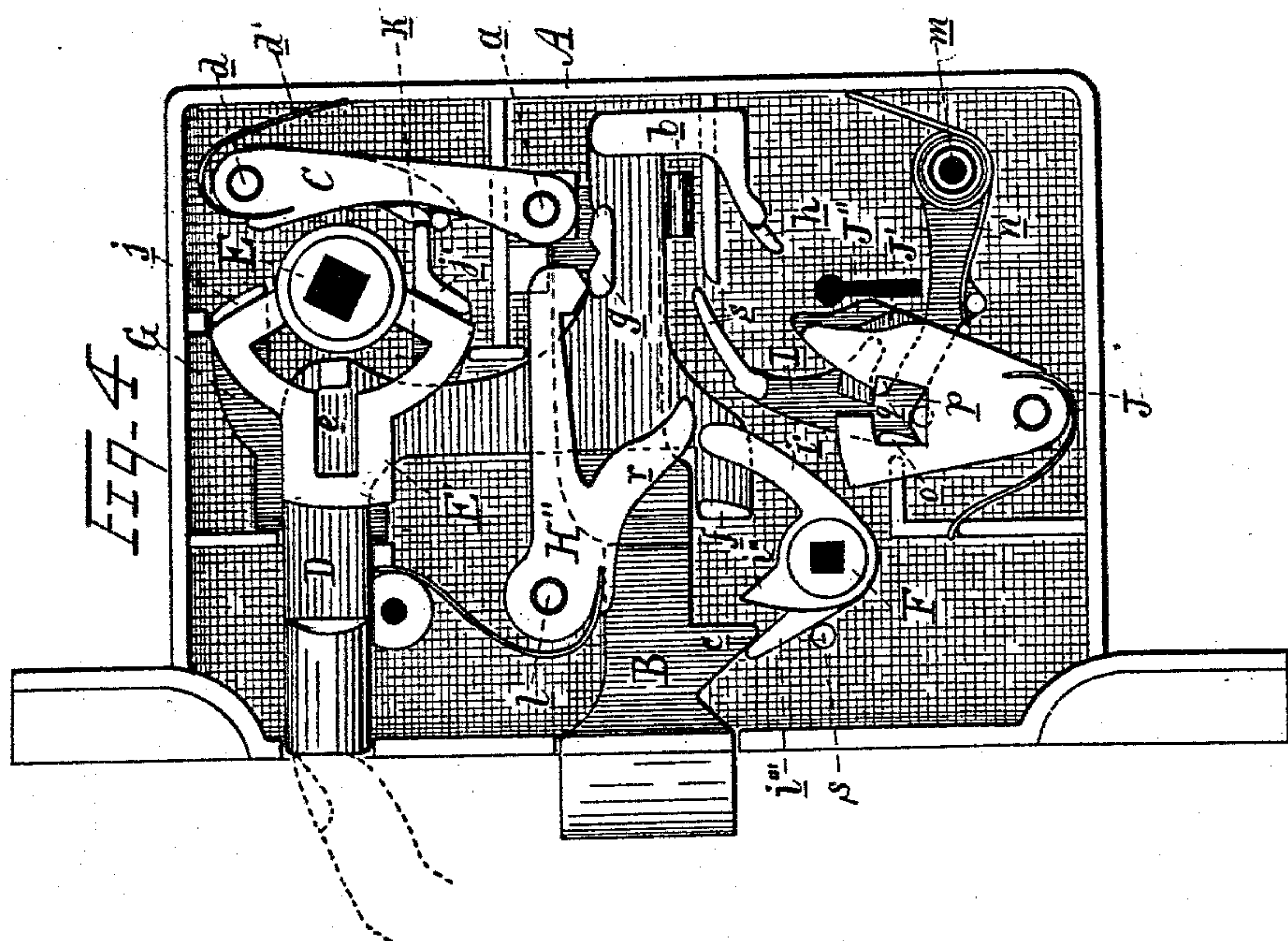
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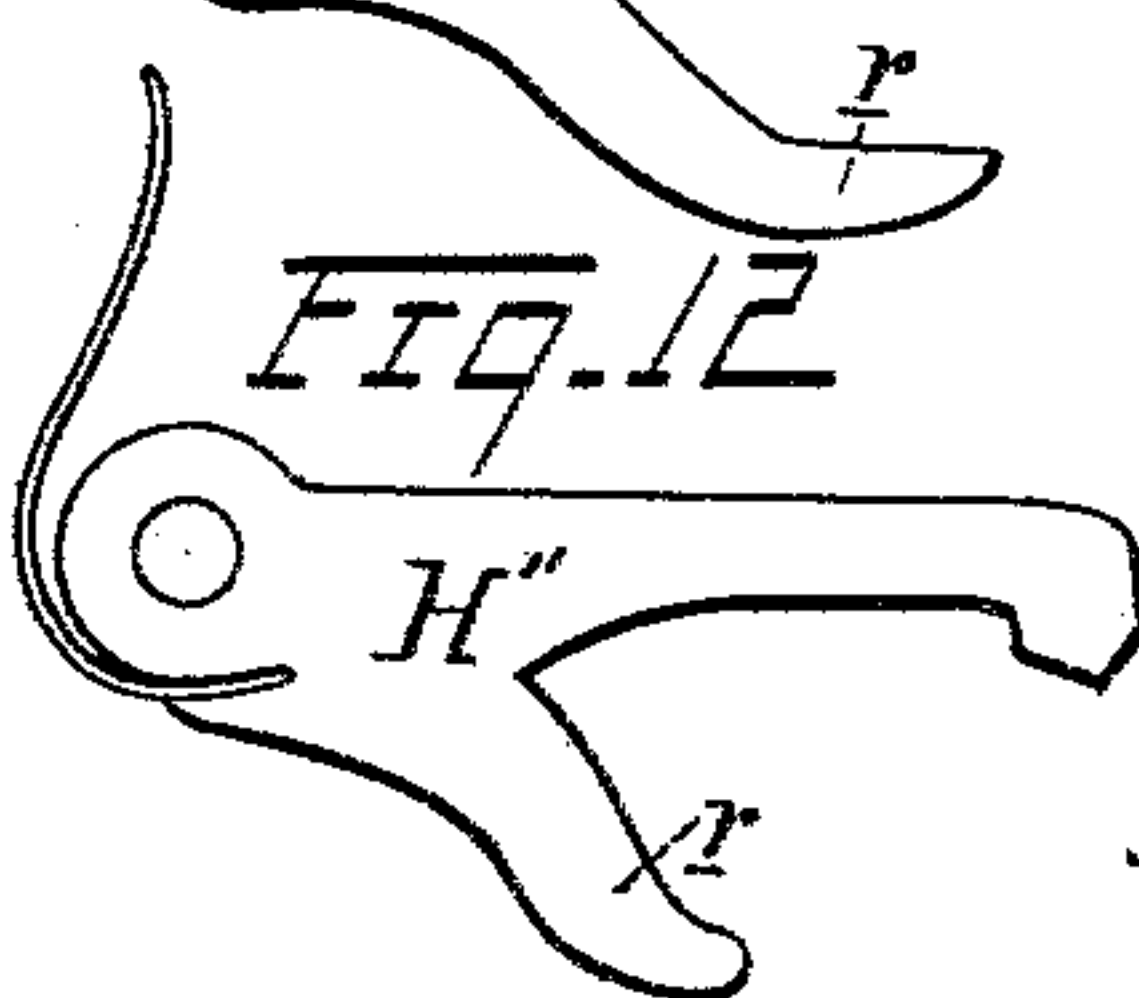
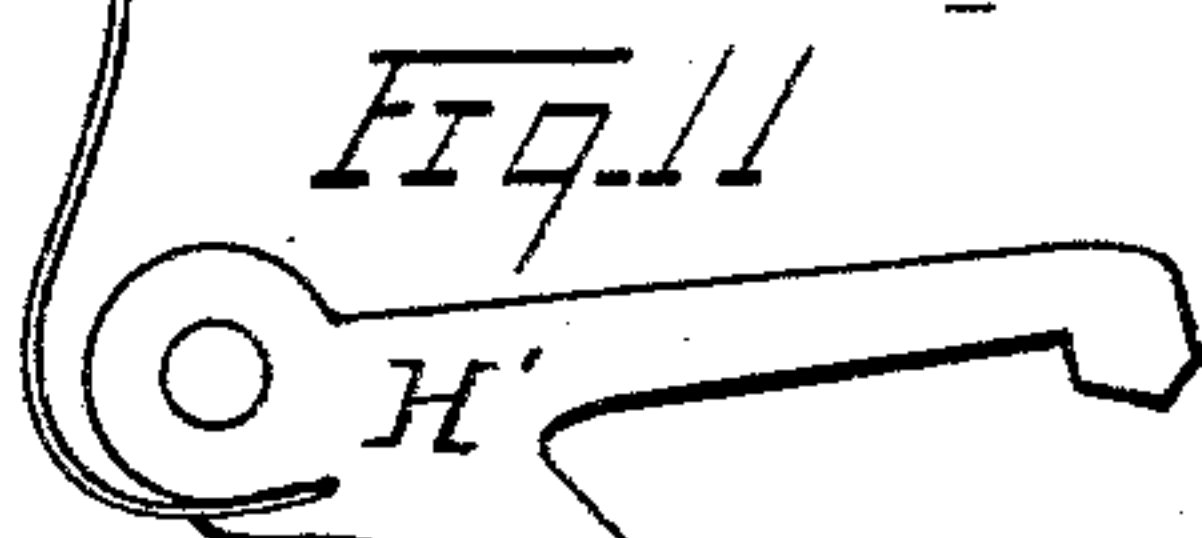
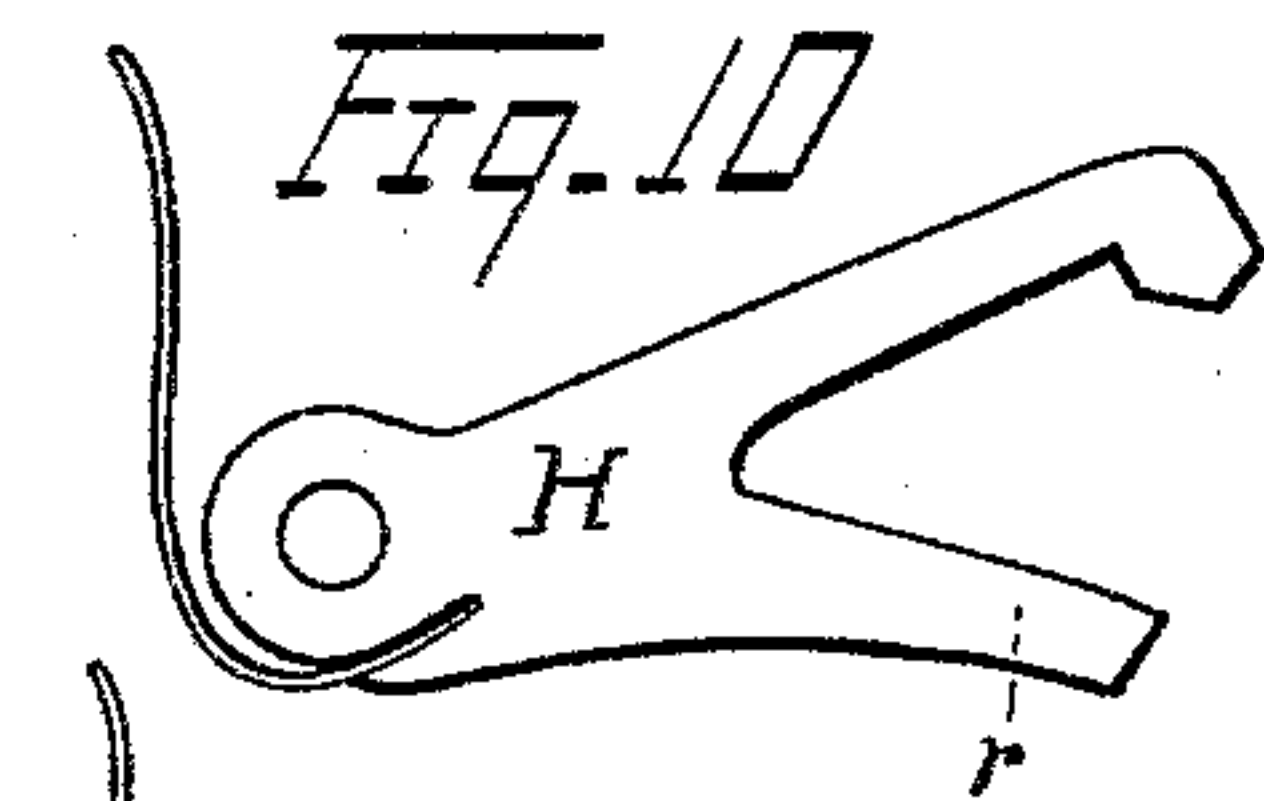
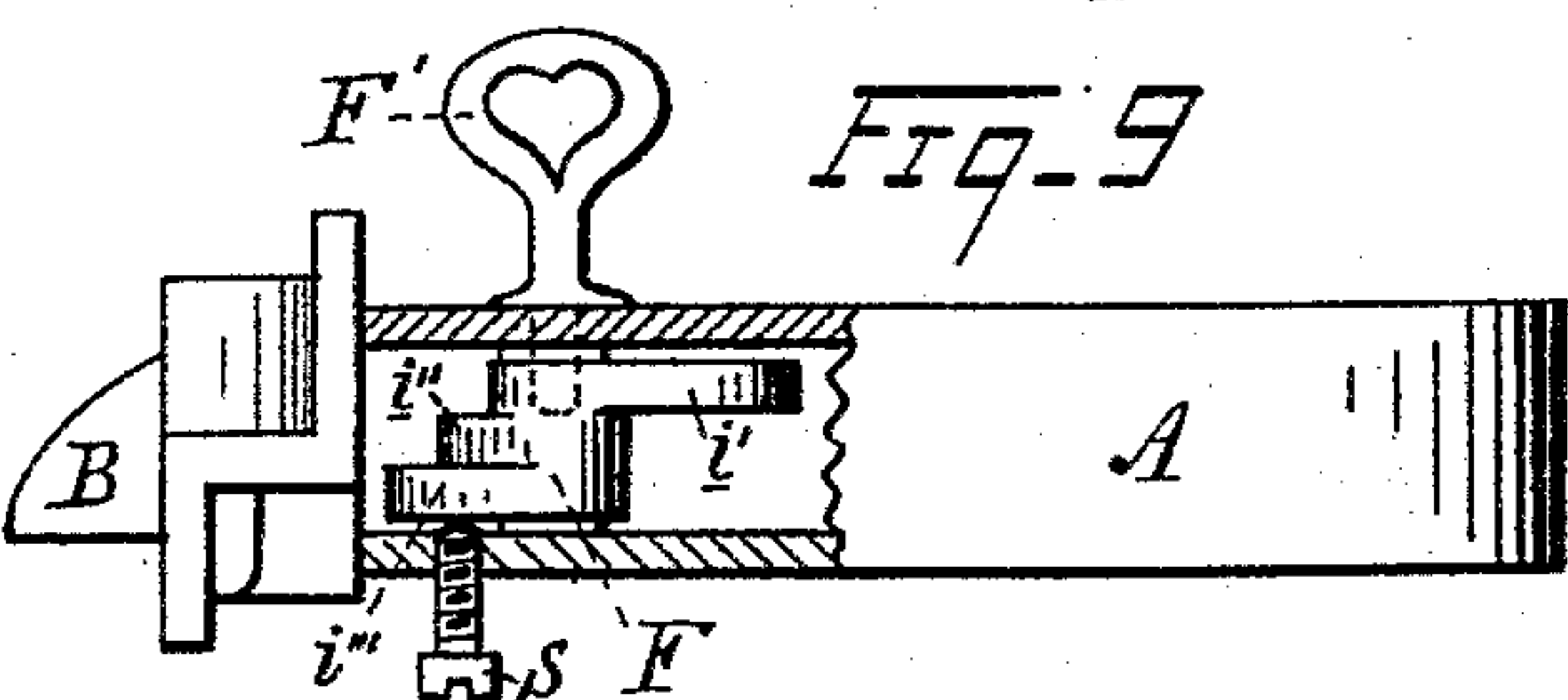
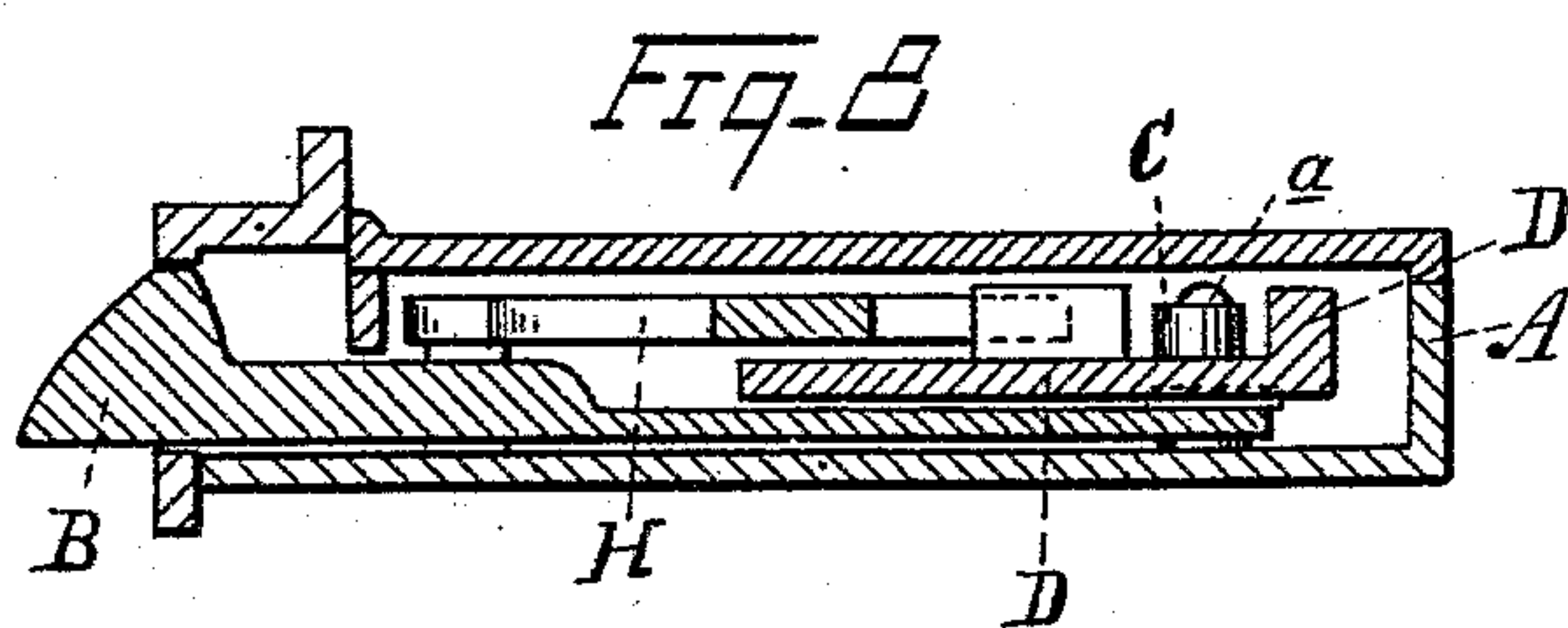
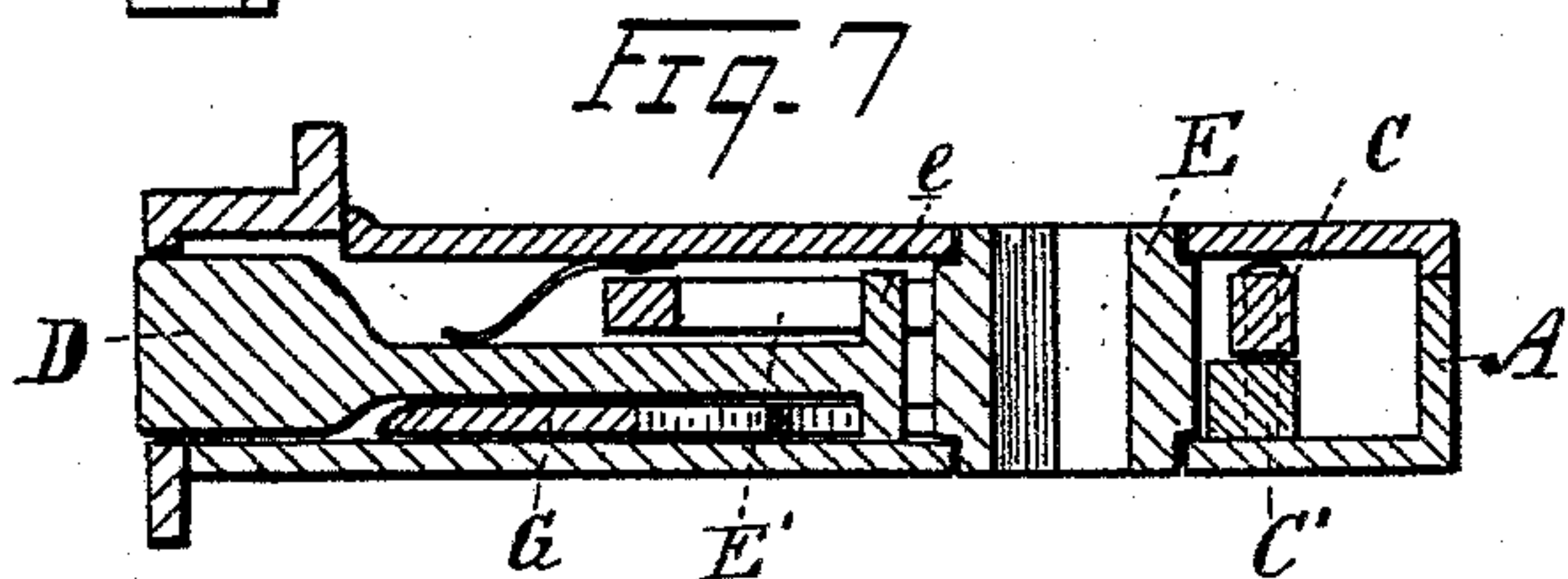
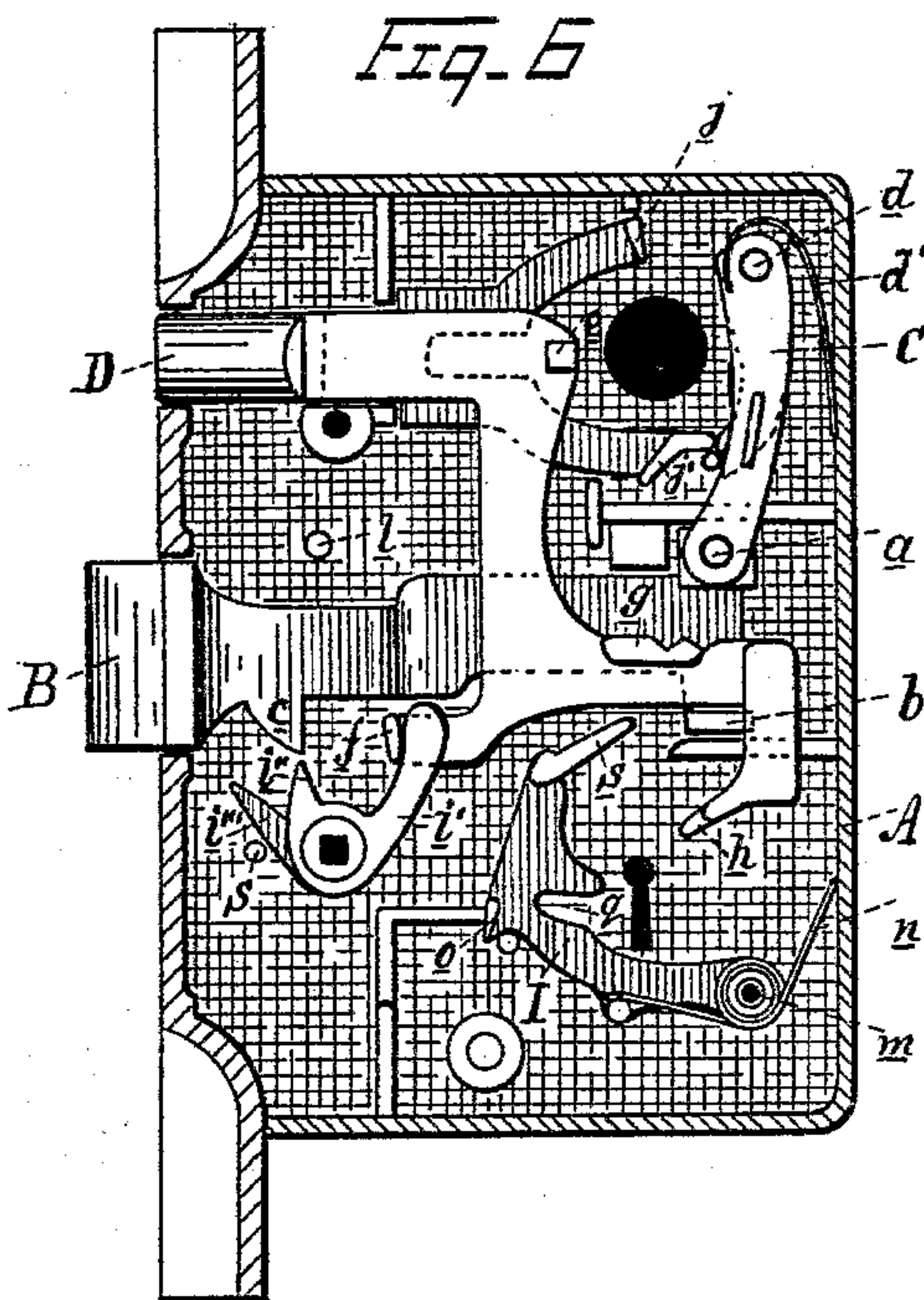
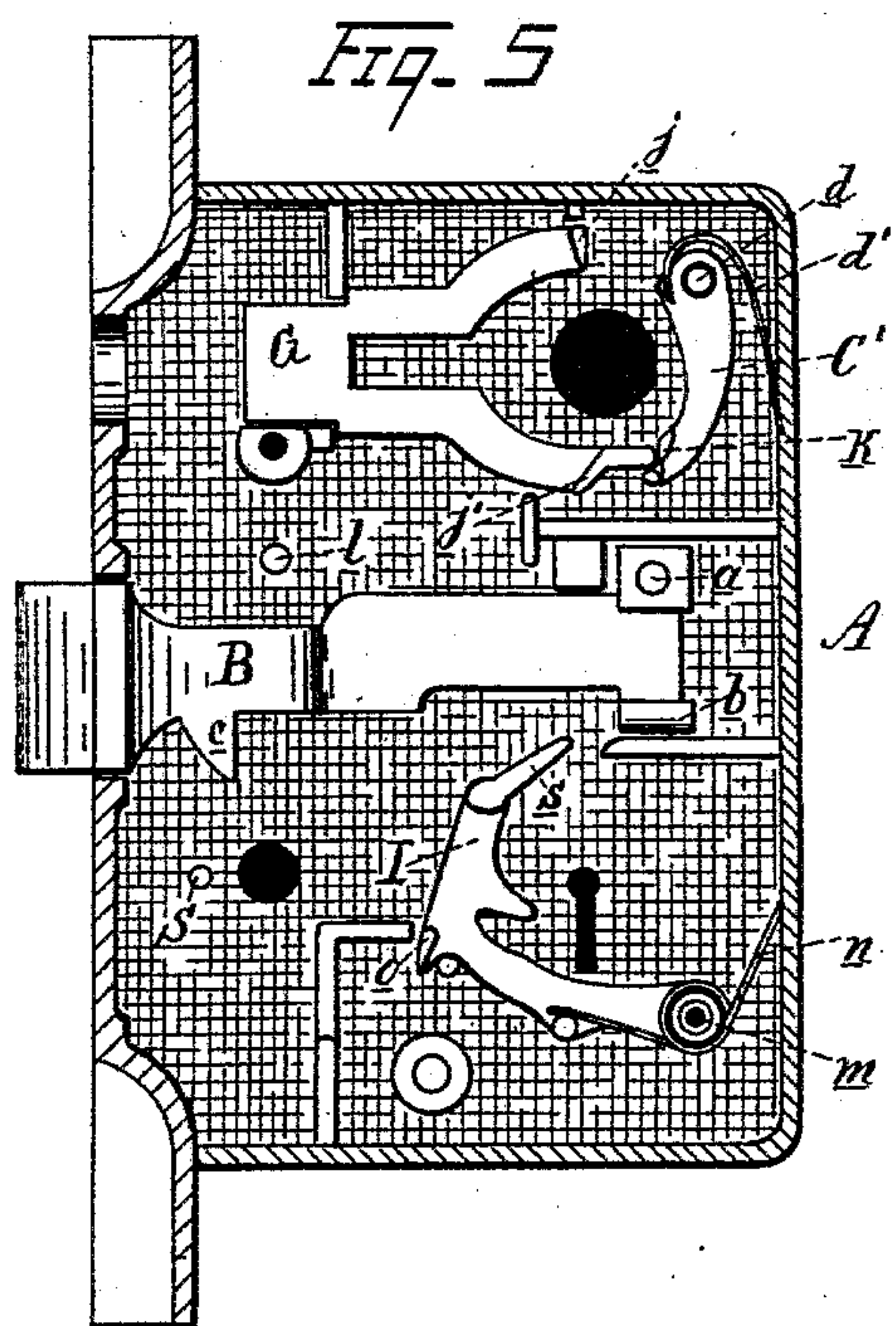
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UNITED STATES PATENT OFFICE.

THEOPHILUS A. AUBERLIN, OF DETROIT, MICHIGAN.

LATCH AND LOCK COMBINED.

SPECIFICATION forming part of Letters Patent No. 414,482, dated November 5, 1889.

Application filed October 17, 1888. Serial No. 288,308. (Model.)

To all whom it may concern:

Be it known that I, THEOPHILUS A. AUBERLIN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in locks; and the invention consists in the construction, arrangement, and combination of different parts, which can be made available in locks or latches or in combined lock and latches, as will be more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 represents a lock provided with my improvements, and with the cover of the case removed to show the different parts. Figs. 2, 3, and 4 are like views slightly modified. Figs. 5 and 6 are similar views with some of the parts removed to show more fully the construction of the remaining parts. Fig. 7 is a section through the key-bolt. Fig. 8 is a section through the latch-bolt. Fig. 9 is an edge view. Figs. 10, 11, and 12 show detached views of the key-bolt tumblers in the various modifications shown in Figs. 1, 2, 3, and 4.

A is a casing, either of the form used for mortise-locks or of the form used for rim-locks.

B is the latch-bolt, provided with the pin *a* and with the shoulders or projections *b* and *c* on the lower side, as plainly shown in Fig. 5.

C C' are two dogs turning on the stud *d*. The upper dog C engages at its lower end with the stud *a* of the latch-bolt, and the lower dog C' is provided at its lower end with the stud *h*. Both dogs have the springs *d'*, the upper one being provided with an easy one and the lower dog with a harder one.

D is the key-bolt, provided upon its face (see Fig. 6) with the studs *e*, *f*, and *g*, and with the heel-extension *h*, which projects in proximity to the key-hole.

E is the nut into which the spindle of the door-knob engages, and this is provided with the slotted yoke E', into which the stud *e* of the key-bolt engages.

F is another nut, into which the shank *i* of the handle F' engages. This nut is provided with the fingers *i'* *i''* *i'''*.

S is a set-screw entering from the outside through the case in proximity to the nut F.

G is a bifurcated slide (see Fig. 5) embracing the spindle-nut E, and provided with the studs *j j'*, projecting from its face at the respective ends of the bifurcations.

H is the large tumbler, (and H' and H'' modifications thereof,) which controls the key-bolt which turns on the pin *l*, and is entirely removed from proximity to the key-hole, to be out of the reach of the lock-pickers' tools, and cannot be raised from the outside, except through the medium of the dog I, which strikes against its arm *r*. As an increased safeguard, the free end of the dog I is widened out at the portion marked *s*, to form a perfect cut-off or screen between the key-hole and the arm *r* of the tumbler when the key-bolt is closed. The dog I turns on the pin *m*, and is provided with a suitable spring *n*, and with the stud *o*, projecting from its face and engaging into the slots *p* of the tumblers J, J', and J''. It is also provided with the notch *q*, into which the bit of the key engages.

The parts being arranged and constructed substantially as described and shown, they are intended to operate in a combined lock and latch, as shown in Fig. 1, as follows: By inserting a suitable key adapted to the peculiar tumblers J, J', and J'' and operating it in the usual manner, its engagement into the key-notch *q* of the dog I will cause the free end of said dog to lift up the large tumbler H and unlock it from the stud *g* of the key-bolt. In the further movement of the dog the free end of it then strikes the projection *b* of the latch-bolt and the shank *h* of the key-bolt, and thus will unlock or retract both of them simultaneously. When so retracted, the free end of the large tumbler H engages into a V-shaped groove on top of the stud *g* of the key-bolt, and thereby holds the latter in its unlocked position sufficiently firmly to prevent its accidental displacement. After the key is removed the latch-bolt B is free to return again to its thrown position under the action

of the spring of the upper dog C. However, it cannot be operated by the door-knob, as the stud *e* of the key-bolt is still within the longitudinal portion of the slot in the yoke
 5 E'. To liberate the nut E so it can be turned by the knob and thereby operate the latch, the key-bolt B has to be further pushed back by the finger of the operator into the position shown in Fig. 4, which shows the condition
 10 into which the lock has to be to operate the latch freely by the bolt. To operate the latch in this condition of the lock without the help of the key, the small handle F' has to be used, which by the engagement of the finger *i*' against the projection *c* of the latch will throw
 15 the latch back.

The locking of the key-bolt is either accomplished by the key, which operates against the shank *h* of the key-bolt, or by the handle
 20 F', which is adapted to bring the finger *i*' into engagement with the stud *f* of the key-bolt. This operation of the handle F' can, however, be suspended or made impossible by screwing in the set-screw S far enough to interfere with the turning of the nut F in the
 25 direction required to accomplish the throwing of the key-bolt. Thus with the construction of the parts shown in Fig. 1 the lock may be used to operate in two ways: first, by
 30 screwing in the set-screw S the key will operate the latch and key-bolt, the latter acting as a stopper to the door-knob. If it is, however, pushed back with the finger, it releases the door-knob, but can be stopp'd at
 35 any time by the use of the handle F', which is enabled to give a sufficient throw for the purpose.

To retract the key-bolt the key is required, and may be used from either side, the key-
 40 bolt closing up the latch-bolt at the same time and preventing the latter from being turned by the small handle. A second modification is then obtained by the same combination of parts when the set-screw S is with-
 45 drawn. Then the key-bolt can be thrown out by the small handle; but the key is required to unlock. This second arrangement is shown in Fig. 2.

A third modification may be obtained by
 50 using the large tumbler of different form, as marked H' in Fig. 3. This tumbler has an arm *r*, which is controlled both by the finger *i* and by the dog I, all so arranged that the latch and key-bolt can be operated by
 55 the small handle as well as by the key.

A fourth modification may be obtained by using a large tumbler of the form shown in Fig. 4 and marked H''. In this tumbler the
 60 arm *r* is so shaped as to be out of the way of the finger *i*' as well as out of the way of the dog I. By this arrangement the key will operate only the latch-bolt, and the key-bolt has to be operated by the small handle, which thus operates as a stopper and night-bolt
 65 combined.

The advantages of my improvement over the present construction of locks employed

for the same purpose may be stated as follows:

First. In front-door locks, to which my con- 70
 struction is applicable, only one key is required to operate the latch-bolt and key-bolt, each of which being protected by a separate set of tumblers, the set of tumblers controlling the key being made of any suitable
 75 form, as in present constructions of locks, and more or less complicated, as in the manufacture of common or more expensive locks.

Second. The key-bolt will close up the door-knob and latch-bolt. This result can be ob- 80
 tained not only in front-door locks, but in the use of my lock for a common door-lock with the ordinary tumblers, thus giving a lock unsurpassed in strength as a door-fastener without increasing the cost of manufacture. 85

Third. In front-door locks the key-bolt can also be employed as a night-bolt and stopper to the door-knob, thus adding greatly to the simplicity and durability of the lock, as only
 90 nine pieces are required besides the tumbler to make up the lock.

Fourth. Two separate dogs C C' are provided, the lower one with a hard spring and the upper one with an easy spring. This
 95 will give the door-knob a short, equal, and powerful throw, while the action of the latch-bolt is regulated by the upper dog, which allows it to gently snap into the keeper. The same result can be obtained in every door-
 100 lock by the use of this combination.

Fifth. The arrangement of the small latch-bolt handle in combination with other parts of the lock will enable the operator to move
 105 out the stopper and to operate the latch-bolt and key-bolt at will.

I claim—

1. In a combined latch and lock, a key-bolt independently operated of the latch-bolt and controlling said latch-bolt when projected, a
 110 latch-operating mechanism comprising a door-knob controlled by the key-bolt, which forms a stopper therefor, substantially as described, a tumbler controlling the key-bolt, a dog controlling said tumbler and adapted to retract
 115 the key-bolt by the operation of the key, and a tumbler or set of tumblers controlling said dog, substantially as described.

2. In a combined latch and lock, a key-bolt independently operative of the latch-bolt and controlling said latch-bolt when projected, a
 120 tumbler controlling the key-bolt, a dog adapted to operate said tumbler and project the key-bolt by the operation of the key and tumbler or set of tumblers to control said dog, substantially as described. 125

3. In a combined latch and lock, a key-bolt independently operative of the latch-bolt and controlling said latch-bolt when projected, a
 130 latch-operating mechanism operated by the door-knobs and controlled by the key-bolt, a tumbler controlling said key-bolt, a dog controlling said tumbler and operated by the key to project the key-bolt, a tumbler or set of tumblers controlling said dog, and the

small handle adapted to operate the latch and key-bolt independently of the door-knob and key, substantially as described.

4. In a combined latch and lock, the combination of the dog I, the tumbler or tumblers controlling said dog, the key-bolt provided with the shank *h*, the tumbler H, controlling the key-bolt, and the latch-bolt provided with the projection *b*, all so arranged that the dog I in being raised by the key will raise the tumbler H and engage with the shank *h* and projection *b* to simultaneously retract the latch-bolt and key-bolt, substantially as described.

5. In a lock, the combination, with a key-bolt, of a tumbler controlling said key-bolt, a dog operated by the key controlling said tumbler, and a separate set of tumblers controlling said dog, substantially as described.

6. In a lock, the combination of the key-bolt D, provided with the shank *h*, for projecting said key-bolt by the action of the key, the tumbler H, controlling said key-bolt in its locked position, the dog I, adapted to raise the tumbler H by the action of the key to unlock the key-bolt and retract it, and the tumbler J or set of tumblers controlling said dog, substantially as described.

7. In a lock, the combination, with the key-bolt D and the tumbler H, which holds said key-bolt in its locked position out of reach of the key, of the dog I, controlling said tumbler and provided with the shield or guard *s*, extended between the key-hole and the arm *r* of the dog, substantially as described.

8. In a lock, the combination of the latch B, provided with the projection *c*, the key-bolt D, provided with the projection *f*, the tumbler controlling said key-bolt, and the nut F, operated by the handle F' and provided with the fingers *i'*, *i''*, and *i'''* for operating the latch and key bolt, substantially as described.

9. In a lock, the combination of the latch-bolt B, provided with the shoulder *c*, the key-bolt provided with the shoulder *f*, the tumbler controlling the key-bolt, the nut F, operated by the handle F' and provided with the fingers *i'*, *i''*, and *i'''* for operating the latch and key bolt, and the set-screw S, adapted to form a partial stop for the nut F, all substantially as described.

10. In a combined lock and latch, a latch-bolt operated by the door-knobs, a key-bolt operated independently thereof, the slotted yoke E', carried by the knob-spindle and provided with the straight and circular portion, of the slot, and the stud *e*, engaging into said slot to form a stopper for the door-knob, and the studs *j j'*, substantially as described.

11. In a latch-operating mechanism, the combination of the slide G, operated by the door-knobs, the dogs C C', operated by said slide and each provided with the spring, and the latch B, pivotally secured to one of the dogs only, substantially as described.

12. In a latch-operating mechanism, the combination of the slide G, operated by the door-knobs, the lower dog C', provided with the stud *k*, adapted to engage with the slide G, and provided with a hard spring, the upper dog C, carried by the lower dog in one direction only and provided with an easy spring, and the latch B, provided with the stud *a*, engaging with the dog C, all substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 27th day of September, 1888.

THEOPHILUS A. AUBERLIN.

Witnesses:

P. M. HULBERT,
JOHN SCHUMAN.